is, "On voit des franges noires se dessiner sur le mur qui borde notre terrasse." The drawing exhibits five bands; three white, and two dusky-dark, each 4 inches broad; and their form seems to imply that in the longitudinal direction their length was considerable, and that in the lateral direction the repetition was more frequent. Their inclination to the vertical is about 45°; the right-hand end, referred to the hand of a person who is looking at the wall with his back to the Sun, being the lower.

At the Astronomer Royal's request, Mr. Hind was so good as to calculate the position of that point of the Sun's disk which was the last to disappear. It was at 31° from the Sun's vertex towards the east, or towards the left hand of an observer whose face was turned to the Sun. On comparing this with the position of the fringes, as depicted by M. Poulain, and referring the latter roughly to the direction of the Sun's rays, it appears that we may state, with as great accuracy as the observation permits, that the length of the fringes was in the same plane as the tangent to the disks of the Sun and Moon at the place of last disappearance.

The first impression from these appearances is, that they are diffraction-fringes; but the possibility of this explanation would seem to be destroyed by the consideration that any diffraction-fringes must travel with a linear velocity equal to the Moon's linear velocity, and must therefore be totally invisible. The phenomenon is one which deserves the careful attention of observers and optical philosophers. Meantime we may congratulate ourselves that we have for the first time a representation of this singular appearance aspiring to the character of reasonable accuracy. G. B. A.

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*Extract of a Letter from Herr A. Auwers to the Astronomer Royal, dated 5, Gartenstrasse, Gotha, 1861, December 1.* —(Translation.)

Perhaps it is not uninteresting to you to know the result of researches on Parallaxes [of Stars] which I have carried out during the last two years at Königsberg. It is known that Struve, from observations with the Pulkowa Refractor for the parallel of 61 *Cygni*, has obtained a much larger value than Bessel had found with the Königsberg Heliometer, namely, $0''{\cdot}5107 \pm 0''{\cdot}0282$, instead of $0''{\cdot}366 \pm 0''{\cdot}012$. For that reason, I have effected a new determination with the Heliometer, in which I have made use of two comparison-stars different from those used by Bessel, which permit the application of the principle of differences in the most direct manner possible.

From observations on 62 days between 1860 September and 1862 June, I have obtained

$$\text{Parallax of 61 Cygni} = + 0''.5656 \pm 0''.0158.$$

The difference of this determination from Struve's is scarcely greater than its mean error. The mean from both is,

$$\text{Parallax of 61 Cygni} = + 0''.5526 \pm 0''.0138;$$

greater than Bessel's determination by $0''.19$.

Another star whose parallax I have determined is the star with large proper motion lately discovered by Prof. Argelander, namely, Lalande 21258. This star (of the 8.9 magnitude) I have compared on 64 days, from 1860 November to 1862 June, by means of the Heliometer, with one star (of the 8 magnitude) preceding it by $4^m\ 11^s$ and with one star (of the 9 magnitude) following it by $3^m\ 56^s$; and from the differences of observed distances I have found

$$\text{Parallax of Lalande } 21258 = + 0''.2622 \pm 0''.0109,$$

relative to the mean of the two comparison-stars; or absolutely, in conformity with the determinations of Professor Peters,

$$\text{Parallax of Lalande } 21258 = + 0''.2709 \pm 0''.0112.$$

[*Note by the Astronomer Royal.*—The proportion of the discordance of the determinations of the same element, by different observers, to the magnitude of the probable error which each has assigned, throws great doubt upon the validity of such determinations of probable error.]

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In a letter, dated Dublin, Nov. 12, 1862, Mr. Stothard notices the extraordinary brightness of *Aristarchus*, seen by him as a bright speck on the Moon's disk, that morning about $10^h\ 30^m$ A.M. Mean Dublin Time, in bright sunlight.

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Mr. Grove, in a letter, dated Upper Harley Street, 5 Nov. 1862, gives an account (illustrated by three pencil sketches) of the appearances presented by the planet *Mars* on Oct. 26 and 31, and Nov. 3: the telescope used was $4\frac{1}{2}$ inches aperture; focal length 6 feet 2 inches; object-glass by Cooke, of York, capable of dividing $\alpha$ *Coronæ*. He is perfectly satisfied of there being notable changes in the distribution of the lights and shadows, inconsistent, it appears to him, their being land and water, or, as he should perhaps say, land and water *only:*

clouds condensed over large aqueous districts might possibly account for the changes observed; the changes of position by axial revolution would not explain them.

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A paper has been received from Prof. A. D. Wackerbarth, "On the Motion of a Pendulum with especial reference to the Foucaultian Experiments." The greater part of the paper is occupied in the investigation of the equations of motion, which are carefully and elegantly worked out; but the integration of them is developed only so far as to give the ordinary approximate result of a rotation of the plane of oscillation, with a velocity proportional to the sine of the latitude.

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A paper by Mr. Wray, "Observations on *Saturn*," will be published in the following Number of the *Monthly Notices*.—Ed.

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In a letter dated Hamilton College Observatory, Clinton, N. Y., 1862, Nov. 24, addressed to the Astronomer Royal, Dr. C. H. F. Peters gives, for Minor Planet ⑦① *Feronia*, the following elements, which are slightly different from those communicated to the *Ast. Nach.* (under the date Nov. 12, see No. 1396):—

Epoch 1862, Dec. 31·0 Greenwich M.T.

| | | | Mean Eq. 1863·0. |
|---|---|---|---|
| $M_0$ | = | 73° 4′ 56″·48 | |
| $\pi$ | = | 309 48 37·93 | |
| $\Omega$ | = | 207 37 13·11 | |
| $i$ | = | 5 25 55·22 | |
| $\varphi$ | = | 6 41 17·06 | |
| $\mu$ | = | 1034″·0617 | |
| Log $\mu$ | = | 3·0145464 | |
| Log $a$ | = | 0·3569735 | |

(The planet 12-11th magnitude.)

And he gives notice of another new asteroid, which he saw first 12th November and last 23d November; on both which evenings, however, it was clear only for so short a time that he could not determine the position accurately. A good observation (the only one then obtained) was

| | H. C. Mean Time. | R.A. | Decl. | |
|---|---|---|---|---|
| Nov. 15 | $7^h\ 26^m\ 30^s·3$ | $0^h\ 2^m\ 8^s·93$ | $+\ 1°\ 27′\ 12″·2$ | (6 comp.) |

The magnitude of the planet was about 11·7. The places on the other days mentioned differed from that of the 15th about thus:—

| | | | |
|---|---|---|---|
| Nov. 12 | $^{s}$ 0·6 | less in R.A. | $'$ $''$ 1 49 further South. |
| ,, 23 | 19 | more in R.A. | 21 40 further North. |

these motions being taken only by measurement from the chart.

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## *Comets III. and IV.* 1862.

(*Letter from Dr. Bruhns.*)

"*Leipzig*, 6 *Décembre*, 1862.

"Je me permets de vous envoyer des éléments et des éphémérides des deux comètes qui peuvent servir à faciliter leur observation. Les éléments de la première comète sont calculés par M. Engelmann au moyen des observations des 1, 2, et 3 Décembre, ceux de la 2$^{e}$ comète par moi-même au moyen des observations des 1, 2, et 4 Décembre.

| | Eléments de la 1$^{e}$ Comète (Mouvement rétrograde). | Eléments de la 2$^{e}$ Comète (Mouvement rétrograde). | |
|---|---|---|---|
| | Temps de Berl. | Temps de Berl. | |
| Passage au Périhélie | 1863, Fév. 1·708 | 1862, Déc. 31·1959 | |
| | $^{\circ}$ $'$ | $^{\circ}$ $'$ $''$ | |
| Longitude du Périhélie | 34 18·5 | 128 12 55·3 | Equinoxe 1863·0. |
| ,, du Noeud | 114 31·0 | 358 16 11·5 | |
| Inclinaison ... | 86 59·5 | 48 22 23·3 | |
| Log. de la Dist. Périhélie | 9·85124 | 9·935674 | |

### *Ephéméride de la* 1$^{e}$ *Comète pour* 0$^{h}$ *Temps Moyen de Berlin.*

| | R.A. | Decl. | Log Δ. | Eclat. |
|---|---|---|---|---|
| | $^{\circ}$ $'$ | $^{\circ}$ $'$ | | |
| 1862, Nov. 30 | 157 39·8 | — 3 19·2 | 0·0124 | 1 |
| Déc. 4 | 160 39·0 | — 1 33·0 | 9·9601 | ,, |
| 8 | 164 16·9 | + 0 48·1 | 9·9021 | 1·7 |
| 12 | 168 54·8 | + 4 1·0 | 9·8378 | ,, |
| 16 | 175 4·6 | + 8 26·8 | 9·7676 | 3·1 |
| 20 | 182 30·7 | +14 32·9 | 9·6945 | ,, |
| 24 | 196 14·7 | +22 27·1 | 9·6296 | 5·8 |
| 28 | 214 15·3 | +31 0·0 | 9·5912 | ,, |
| 1863, Jan. 1 | 236 48·9 | +36 56·9 | 9·5980 | 6·7 |
| 28 | 305 30·6 | +23 51·2 | 9·9995 | 1·1 |